

## C4d (Polyclonal)

### Rabbit anti-human C4d Polyclonal Antibody

#### REFERENCES AND PRESENTATIONS<sup>1</sup>

- **ready-to-use (manual or LabVision AutoStainer)**  
MAD-000672QD-3  
MAD-000672QD-7  
MAD-000672QD-12
- **Ready-to-use (MD-Stainer)<sup>2</sup>**  
MAD-000672QD-3/V  
MAD-000672QD/V
- **concentrated**  
MAD-000672Q - 1:50 recommended dilution

#### COMPOSITION

Anti-human C4d rabbit polyclonal antibody purified from serum and prepared in 10mM PBS, pH 7.4, with 0.2% BSA and 0.09% sodium azide

**INTENDED USE** : Immunohistochemistry (IHC) on paraffin embedded tissues. Not tested on frozen tissues or Western-Blotting

**CLONE:** Polyclonal

**Ig ISOTYPE:** Rabbit IgG

**IMMUNOGEN:** Synthetic peptide derived from C-terminus of human C4d.

**SPECIES REACTIVITY:** In vitro diagnostics in humans. Not tested in other species

**DESCRIPTION AND APPLICATIONS:** This antibody recognizes the C4d fraction of complement. C4d fraction of complement represents the alpha-2 (42 kDa) portion of the C4 fraction of complement. Among the different complement proteins, the opsonins C3 and C4 have a protector thioester radical. This molecule allows the C4 (and C3) complement fraction to form covalent bonds when activated with the target molecule, thereby generating the C4b (C3b) molecule. When the proteolytic cleavage of C4b occurs, C4d fragment remains covalently attached to the target structure, while the C4c fragment is free. Consecutively, C4d is a stable split product remnant of classical complement activation and an established

marker of antibody-mediated acute renal allograft rejection. Due to its proclivity for endothelium, this

component can be detected in peritubular capillaries in both chronic renal allograft rejection as well as hyperacute rejection, acute vascular rejection, acute cellular rejection, and borderline rejection. It has been shown to be a significant predictor of transplant kidney graft survival and is an aid in treating acute rejection.

**IHC POSITIVE CONTROL:** Lymph node, tonsil or kidney biopsy from acute renal allograft rejection

**VISUALIZATION:** Cytoplasmic, membranous

#### IHC RECOMMENDED PROCEDURE:

- 4µm thick section should be taken on charged slides; dry overnight at 60°C
- Deparaffinise, rehydrate and HIER (heat induced epitope retrieval) – boil tissue in the Pt Module using Vitro S.A CITRATE buffer pH6<sup>3</sup> for 20 min at 95°C. Upon completion rinse with 3-5 changes of distilled or deionised water followed by cooling at RT for 20 min
- Endogenous peroxidase block - Blocking for 10 minutes at room temperature using peroxidase solution (ref. MAD-021540Q-125)
- Primary antibody: incubate for 10 minutes [The antibody dilution (when concentrated) and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by the individual laboratory]
- For detection use Master Polymer Plus Detection System (HRP) (DAB included; ref. MAD-000237QK)
- Counterstaining with haematoxylin and final mounting of the slide

**STORAGE AND STABILITY:**  Stored at 2-8°C. Do not freeze.  Once the packaging has been opened it can be stored until the expiration date of the reagent indicated on the label. If the reagent has been stored under other conditions to those indicated in this document, the user must first check its correct performance taking into account the product warranty is no longer valid.

<sup>1</sup> These references are for presentation in vials of Low Density Polyethylene (LDPE) dropper. In case the products are used in automated stainers, a special reference is assigned as follows:

- / L: Cylindrical screw-cap vials (QD-3 / L, QD-7 / L, QD-12 / L).

- / N: Polygonal screw-cap vials (QD-3 / N, QD-7 / N, QD-12 / N).

For different presentations (references / volumes) please contact the supplier.

<sup>2</sup> For Technical specifications for MD-Stainer, please contact your distributor.

<sup>3</sup> Ref: MAD-004071R/D



Vitro S.A.

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**WARNINGS AND PRECAUTIONS:**

1. Avoid contact of reagents with eyes and mucous membranes. If reagents come into contact with sensitive areas, wash with copious amounts of water.
2. This product is harmful if swallowed.
3. Consult local or state authorities with regard to recommended method of disposal.
4. Avoid microbial contamination of reagents.

**SAFETY RECOMMENDATIONS**

This product is intended for laboratory professional use only. The product is NOT intended to be used as a drug or for domestic purposes. The current version of the Safety Data Sheet for this product can be downloaded by searching the reference number at [www.vitro.bio](http://www.vitro.bio) or can be requested at [regulatory@vitro.bio](mailto:regulatory@vitro.bio).

**BIBLIOGRAPHY**

1. Chandler W, Zone J, Florell S. C4d immunohistochemical stain is a sensitive method to confirm immunoreactant deposition in formalin-fixed paraffin-embedded tissue in bullous pemphigoid. J Cutan Pathol; 36(6): 655-9 2009.
2. Phanomsri EO, Namwat N, Tangrassameeprasert R, Charnteeraprawat C, Paupiroj A. Comparative study for the detection of C4d in paraffin-embedded renal allograft biopsies by immunohistochemical techniques. J Med Assoc Thai; 93 Suppl 3: S61-8. 2010.
3. Miller DV, Roden AC, Gamez JD, Tazelaar HD. Detection of C4d deposition in cardiac allografts: a comparative study of immunofluorescence and immunoperoxidase methods. Arch Pathol Lab Med; 34(11):1679-84. 2010.
4. Kikić Z, Regele H, Nordmeyer V, Wahrmann M, Kletzmayer J, Bartel G, Böhmig GA. Significance of peritubular capillary, glomerular, and arteriolar C4d staining patterns in paraffin sections of early kidney transplant biopsies. Transplantation; 91(4): 440-6. 2011.

**LABEL AND BOX SYMBOLS**

Explanation of the symbols of the product label and box:

|   |  |
|---|--|
|    | Expiration date                                |
|    | Temperature limit                              |
|    | Manufacturer                                   |
|    | Sufficient content for <n> assays              |
|    | Catalog number                                 |
|    | Lot code                                       |
|    | Refer to the instructions of use               |
|    | Medical product for <i>in vitro</i> diagnosis. |
|  | Material safety data sheet                     |